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GROUNDWATER SAMPLING AT UST CLOSURE

Sampling is required at UST system permanent closure or change in service to check for the presence of a release. Chapter 567—135.15(3)”b.” states, “For all permanent tank and piping closures or changes-in-service, at least one water sample must be taken from the first saturated groundwater...” Notice the statement reads, “at least one groundwater sample,” and not “only one groundwater sample.”

Moreover, Chapter 567--135.15(3)a. states “Before permanent closure or a change-in-service is completed, owners or operators must measure for the presence of a release where contamination is most likely to be present at the UST site.” In other words, one groundwater sample is the minimum, and in many cases, may not be sufficient. With larger sites, and increased distances between tanks and dispensers and greater lengths of piping, one groundwater sample is likely not enough to assess for the presence of a release when multiple components of the UST system are undergoing permanent closure or change-in-service.

This is a decision that rests largely with the certified groundwater professional (CGP). After reviewing the closure report, if one groundwater sample was not sufficient, the DNR would send a letter to the owner requiring more work, i.e., an additional groundwater sample. Lately, however, we have encountered more closure reports that have groundwater monitoring wells that appear to only represent one or two components of a UST system, and clearly not the entire layout.

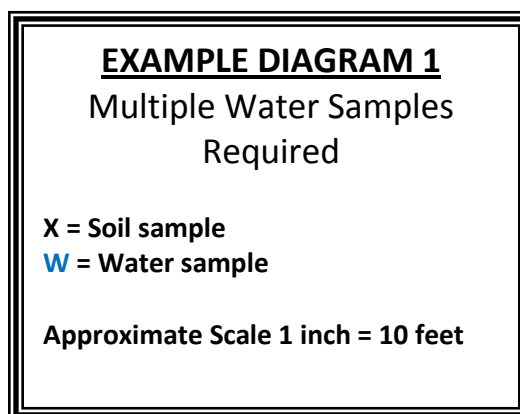
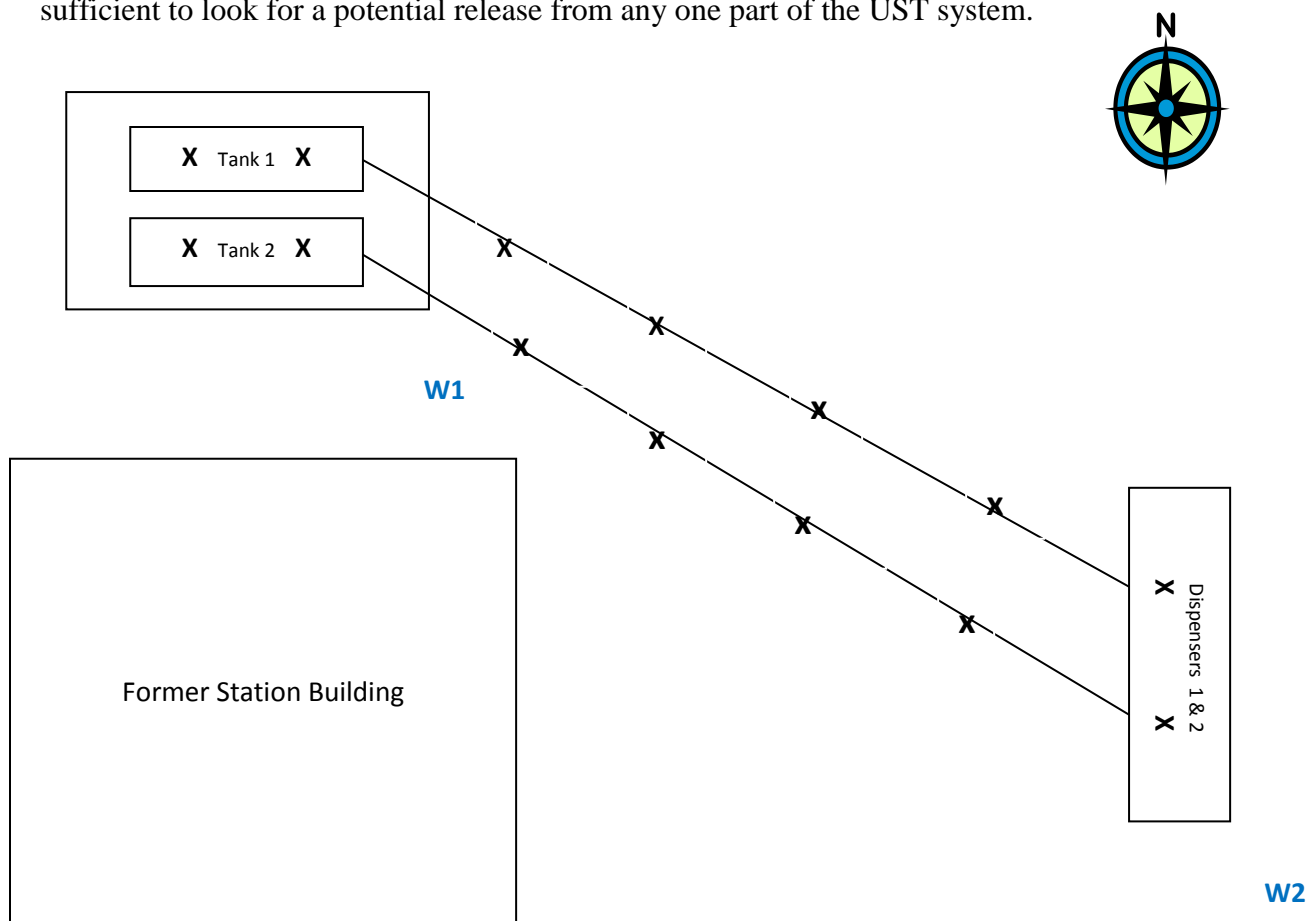
Re-mobilizing a drill or direct push rig for an additional sample is costly for the owner and the CGP; better to plan beforehand the number of wells required, and then install the proper number of wells when the rig is on site. If you are in doubt about how many wells to install at an UST closure, ask yourself if the well location would be representative of a release from all parts of the UST system or from the component being removed. In many cases, one well may not be enough. Besides the tank pit, chances are very good you will find contamination beneath the dispensers, especially where there is no containment, and at the joints/elbows of piping.

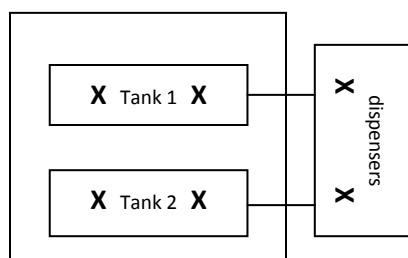
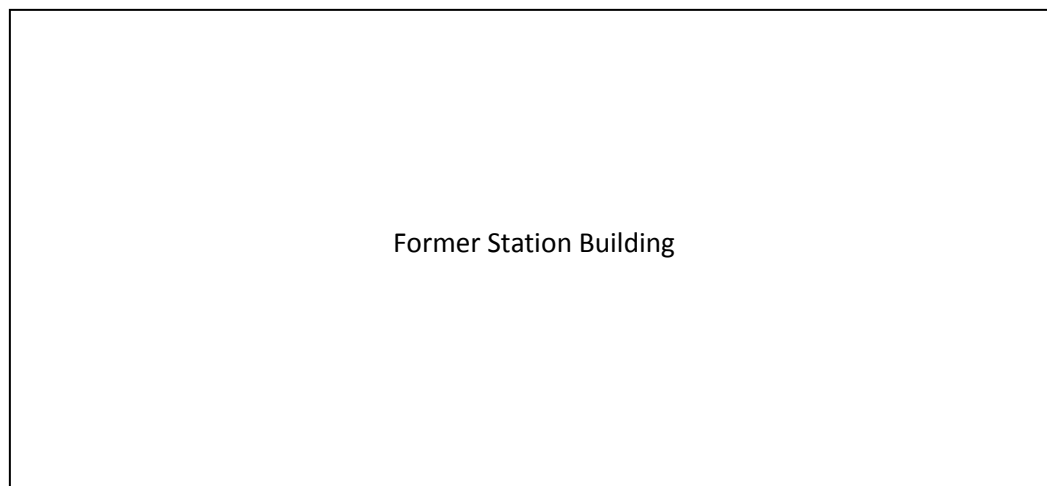
When collecting a groundwater sample for a tank closure, make sure you collect the sample from a monitoring well located downgradient and outside the tank excavation, and not farther than 20 feet from the tank excavation. A “grab” water sample from the tank excavation (perched water or water table) is not representative of a release from the tank, and may indicate a false positive result, and cross contamination. The well must be located such that it intercepts a release flowing away from the tank (or away from other components of the tank system where a release may have occurred (dispensers, piping joints)). A “grab” water sample from the tank excavation is invalid for either UST closure or LUST RBCA requirements.

Here are two site diagrams that exemplify what is discussed above.

The first diagram shows an example where there is a considerable length of piping separating the dispenser area and the tanks. A release from the dispenser area and piping would not be represented by the water sample from W1 because it is located upgradient from the dispensers and most of the product piping. Whereas a release from the tanks may not be represented by a water sample at W2 due to the distance from the potential tank sources. Both water sample locations are necessary to complete a representative look for releases from the entire UST system at closure.

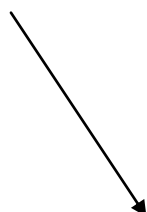
The second site diagram shows an example where one UST closure water sample would be sufficient to look for a potential release from any one part of the UST system.





W1

Groundwater
Flow Direction



EXAMPLE DIAGRAM 2
Single Water Sample
Required

X = Soil sample
W = Water sample

Approximate Scale 1 inch = 10 feet

If you have any questions please feel free to contact Elaine Douskey (515)281-8011 or elaine.douskey@dnr.iowa.gov

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